MEMORANDUM

SUBJECT: Comments on the Barge Doc Facility Closure Report for the Falcon Refinery Superfund Site (Ingleside, TX)

FROM: Kenneth Shewmake, USEPA Ecological Risk Assessor

TO: Brian Mueller, USEPA Remedial Project Manager

DATE: February 14, 2014

General Comments:

1. The risk assessment methodology used in this document deviates significantly from the method outlined in the RI/FS work plan and in EPA guidance on risk assessment. The Ecological Risk Assessment Guidance for Superfund (EPA,97) describes an 8 step process for conducting an ecological risk assessment. At the conclusion of step 2, a screening level ecological risk assessment (SLERA) report is produced, and a scientific management decision point (SMDP) can determine the need to continue with the risk assessment. This document attempts to combine the baseline human health risk assessment (BHHRA) and the SLERA into combined risk assessment they are calling a screening human health and ecological risk evaluation (SRE). This approach does not satisfy all the requirements of a BHHRA and a SLERA. In addition to this the document submitted contains significant calculation errors that will require extensive revision. Because of the failure to follow guidance, the calculation errors in the report, and the key data that is missing from this report, this document is not sufficient to make a SMDP decision.

2. A conceptual site model CSM that shows all pathways evaluated, and all potential pathways is needed in this document.

3. If the intent of this document is to provide information needed for a SMDP on the barge dock facility, then the document needs to be more focused on this area. The Introduction provides general site history with two brief statements on the intent to evaluate the barge area. The description of AOCs discusses all the AOCs for the site and does not provide an adequate discussion of the barge area. Is the area described as the barge area limited to AOC4 or are other areas to be included in this evaluation? Are pipelines and other facilities that extend into other AOCs also included in this decision? Is the entire area inside the purple border on figure 4 considered the barge area? This information needs to be provided.

4. This document did not provide an adequate description of the habitat and receptors present in the barge area. If the area is considered disturbed then a discussion of factors such as fencing (height, quality of fence), pavement,

buildings, if vegetation is maintained (mowed, cleared) and other factors that degrade habitat quality should be discussed. A discussion of the potential presence of threatened and endangered species as well as proximity to critical habitat should be provided. The presence of undeveloped land, and surface water such as the wetland area, in close proximity to the barge area should be discussed. The presence of greenbelts, parks, and natural areas in close proximity to the site needs to be discussed. Future use and zoning also need to be discussed in greater detail. Strong evidence that the site should be considered an industrial area, and that it will remain an industrial area in the future, is needed if the area is to be considered disturbed habitat.

5. A discussion of contamination migration routes to and from the barge area, and from other AOCs should be presented. Additional information on the source of contamination should be presented.

6. The data reduction guidelines that were described in the work plan(5.6.1.2) and the guidelines for selecting chemicals of potential concern (COPCs) (section 5.6.1.3) were not followed in this document. The work plan specified rules for dealing with non-detects, inadequate detection limits, bioaccumulative compounds and retaining members of a chemical class when some chemicals from that class are selected as COPCs. This report did not follow these guidelines.

7. During a SLRA the max values should be used for exposure point concentrations. This is discussed in the work plan on the top of page 44. It is also discussed in section 2 of The Ecological Risk Assessment Guidance for Superfund (EPA, 97).

8. This document needs to discuss potential ARARs that may apply at this site.

9. More information is needed on the removal action and on the oil spill that occurred when a tank ruptured.

Specific Comments:

1. **Table One:** The human health screening levels for metals have the residential and the commercial/ Industrial numbers reversed.

2. **Figure one:** Map is low resolution and is pixilated. The names of streets and other landmarks are not legible.

3. **Section 3.5, Redfish Bay:** The report states that a review of data for sediments and surface water in Redfish bay was not performed due to barge traffic in the intercostals waterway. Data was collected for this AOC in 2007 and in 2013. This data was not presented. Background data may be needed to account for anthropogenic background in AOC 5.

4. **Section 6.1:** The text needs to clearly state when the information being discussed is limited to one AOC and when the results are for the entire site.

5. **Section 6.1:** This report states that groundwater will not be evaluated for human use due to high salinity. Data supporting this claim was not provided. The TCEQ groundwater classification was not provided. Information on total dissolved solids was not provided. Information on the depth of groundwater and the direction of flow was not provided or cited. The possibility of vapor intrusion was not discussed. The location of residential water wells was not discussed. The information provided is not sufficient to support this claim that groundwater is not suitable for human use.

6. **Section 6.**3: The exposure point concentrations used in this evaluation are the 95 percent upper confidence limit (95 UCL) of the arithmetic mean concentration and not the max values that are normally used in screening level risk assessments. Presenting a comparison of the 95 UCL value to the screening value after showing a comparison to max values might be useful in determining the need to further evaluate chemicals that exceed screening values.

7. **Section 6.**5: The equations used for calculating non-cancer and carcinogenic risk do not match the ones provided in the RIFS Work Plan or EPA guidance. The target hazard quotient (THQ) used in the non-cancer hazard evaluation did not affect the results as the value was 1 and multiplying by 1 did not alter the result. A target hazard quotient of 1 was already factored into the equations used to develop the RSLs. This modification to the equation used was not needed.

8. **Section 6.6 and Table 7:** The equation shown for calculating cancer risk in section 6.6 is incorrect. The target cancer risk value (TCR) was already incorporated into the EPA RSL tables. Multiplying the cancer risk result by 10^{-6} results in dramatically lower cancer risk values. This is a significant mistake that calls into question all cancer risk results presented in this document.

9. **Table 6:** The screening values for TCEQ PCLs and USEPA RSLs are reversed.